



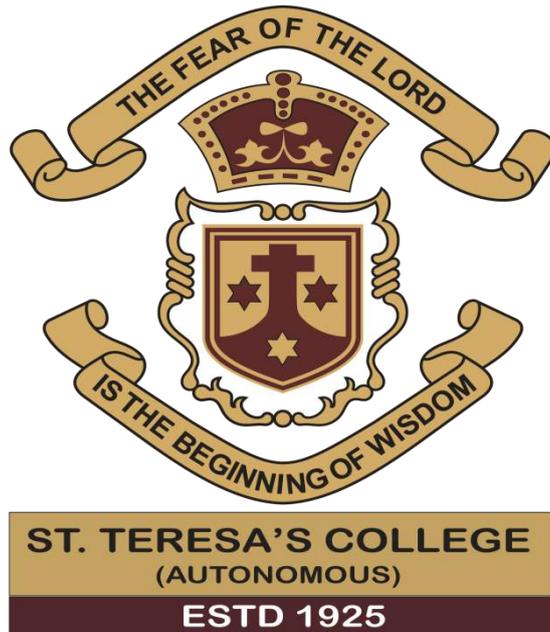
**ST.TERESA'S COLLEGE (Autonomous)  
ERNAKULAM**

**REPORT  
OF  
"ENTE HARITHA BHAVANAM"  
2017-2018**

**AN INITIATIVE  
OF  
BHOOMITHRA SENA CLUB,  
ST.TERESA'S COLLEGE, ERNAKULAM**

**BHOOMITHRA SENA CLUB**  
**ST.TERESA'S COLLEGE, ERNAKULAM**

BMC Code: 107/EKM/05/10



**REPORT OF**  
**ENTE HARITHA BHAVANAM PROJECT**  
**2017-18**

**Table of Contents**

*Forward*

*Acknowledgement*

*ENTE HARITHA BHAVANAM PROJECT, St Teresa's college*

	Pg. No
1.1 The Ten commandments of Ente Haritha Bhavanam.....	1
1.2 Organisational Structure .....	2
1.3 Action Plan.....	3
1.4 Mode of Operation .....	4
1.5 The journey so far.....	4
1.6 The record of photographs shared .....	4
1.7 Meetings, workshops, seminars, other activities.....	5
Meeting with District Collector.....	6
Progress of the 10 Commandments.....	8
1.8 Green Habits Survey.....	31
Green audits of Best performing student's Home .....	33
Some difficulties and suggestions to the authorities .....	35
1.9 Looking Ahead.....	39
1.10 Recommendations .....	40
1.11 Annexure	

**FORWARD**

It is with immense happiness that I congratulate the 'Ente Haritha Bhavanam' project team. The project is the brainchild of the Ernakulam District Collector K. Mohammed.Y. Safirulla and a joint initiative of Ernakulam District Suchitwa mission. It is a matter of pride that this pilot project handed over to our college, is successfully completed in compliance to the vision of the project.



**Dr. Sajimol Augustine M.**

Principal

## **ACKNOWLEDGEMENT**

First and foremost, we thank God Almighty for guiding us and protecting us throughout this endeavour. It was only because of His blessings and grace that we were able to complete our project as efficiently as possible.

We express our sincere gratitude to Shri K Mohammed Y Safirulla IAS, Collector and District Magistrate Ernakulam., the mastermind behind this pilot project and Ernakulum District Administration, District Suchitwa Mission for their unfailing support and encouragement

The encouragement and assistance we received during the course of the project was remarkable. We would like to place on record, our gratitude to each one of them

Our sincere thanks to Dr Nirmala Padmanabhan, Dr Meera Jan Abraham and Mrs Linda Therese Luiz for their sincere guidance and support without whom the completion of this project would not have been possible.

We extend our heartfelt gratitude for the blessings and encouragement of Rev Dr. Sr Vinitha CSST, Director of the college, Dr Sajimol Augustine, principal of the college without whose support this venture would not have been possible.

Heartfelt thanks to the core team members, student coordinators and all the student volunteers for their support and cooperation.

## **1 ENTE HARITHA BHAVANAM**

## 1. ENTE HARITHA BHAVANAM PROJECT 2017-18

*Go green and make a difference in your home!*

'EnteHarithaBhavanam Project', brainchild of the ErnakulamDistrict Collector K. Mohammed Y. Safirullaand a joint initiative of ErnakulamDistrict Administration,District Suchitwa Mission and St. Teresa's College (Autonomous),Ernakulam has provided a unique platform for college students to contribute to environmental protection from their own homes. A set of **Ten Commandments**of a green home dealing with the management of waste, organic cultivation of vegetables, green protocol and various green habits has been introduced to all the second-year undergraduate students of St. Teresa's College. The plan is to utilize students' familiarity with social media, specifically WhatsApp, to initiate behavioural change in students and encourage green habits.

Green habits of each home and students is highlighted and substantiated through WhatsApp photos. Achievers are identified, their claims substantiated through social/green audits conducted by student leaders and final performers are recognized by handing over certificates. Such recognition helps to mouldself-perceptionas a green individual and motivate others also. Project overall aimed to encourage a culture of caring for the environment starting from one's own home.

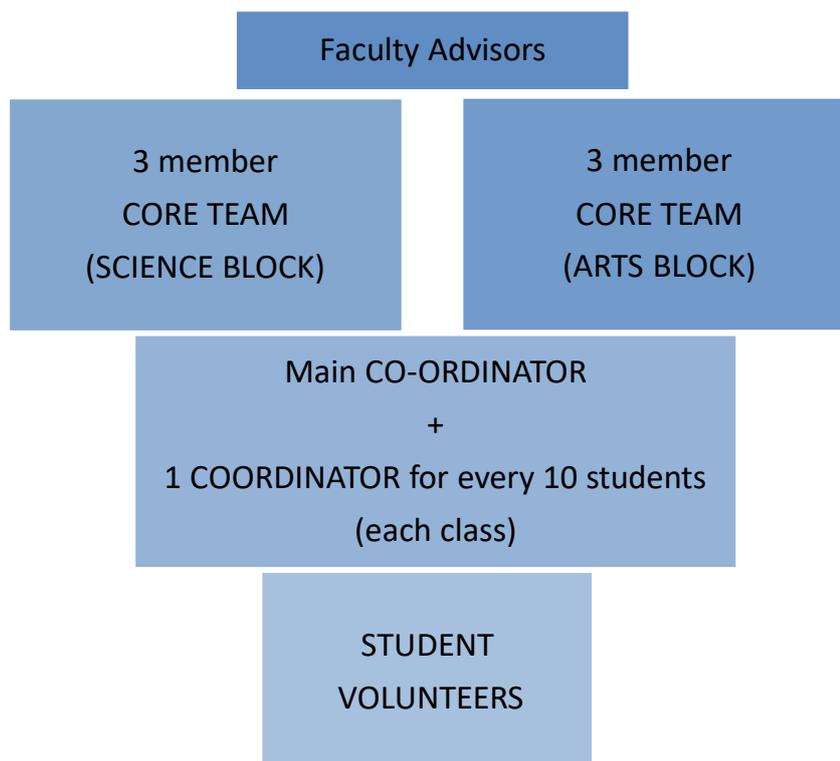
A baseline survey was conducted to understand the extent to which these principles are in practice in the homes of students. This is a pilot project which may be extended to other educational institutions in the district as well.

### **1.1 The Ten Commandments of *EnteHarithaBhavanam***

1. Segregate the solid waste generated at home into bio degradable/non-biodegradable components
2. Feed biodegradable waste to cattle/dogs/cats or convert it to compost through decentralized systems, either individual or community-based
3. Safely hand over non-biodegradable waste to recyclers
4. Engage in organic cultivation of vegetables at home
5. Observe Green Protocol for functions at home. Do not use disposable plates, glasses,bottles, etc. (of paper or plastic) for serving food during social functions at home. Say No to biodegradable decorative items
6. Say No to plastic bags

7. Do not buy food parcels in non-reusable packaging such as thin plastic foils, aluminium foils, etc.
8. Buy at least five grocery items without packaging
9. Keep track of electricity and water bills at home and bring about reduction in these
10. Spread awareness about all of the above message to at least five others

## 1.2 Organizational Structure



The project covers all the students of second year degree (total number of students: 927). Each class is divided into groups of ten with one coordinator (total number of coordinators: 90). In each class there is also one 'Main coordinator' who conveys the activities of the students in her class to the common WhatsApp group. 3 core members each were selected for Arts block (Sheethal V.S., Aleena Augustine and Riya Rose Joseph – the latter replaced by Teresa Joshy) and Science block (Ardra P.N., ElizabethVargheeseAnthikkat, Athira Menon) who are involved with the overall running of the project – from disseminating the ideas and organizing groups in each class to planning strategies and managing the WhatsApp group. Dr. Nirmala Padmanabhan is the Main Faculty advisor and the driving force behind the project. The other faculty members involved in coordinating the project are Linda Therese Luiz and Leena George.



*Figure 1: The Core Team with Dr. Nirmala - Aleena, Elizabeth, Ardra, Riya, Athira and Sheethal*

### **1.3 Action Plan**

- To put up photos collected from the WhatsApp group on the college LED screen to give special recognition to students who cooperated for this project.
- Monthly tabulation of activities to determine the ‘Green Classroom’ of each month to further motivate students
- Survey of green habits- to determine the impact that Ente Haritha Bhavanam has been able to bring about
- Awareness program for all the student volunteers
- Audits of the homes of best-performing students
- Mid-term award for Best Performing Coordinator and Class

### **1.4 Mode of Operation**

The student volunteers are expected to take photos of their ‘green habits’ and activities which are in accordance with the Ten Commandments and share with their coordinator via WhatsApp who will in turn share these with the Main coordinator. The Main coordinator of

each class is expected to share the activities of her class on the WhatsApp group of all the coordinators giving the name of the volunteer and her department as a caption.

### 1.5 The Journey So Far

The project was introduced to the second year degree students of St. Teresa's College on the occasion of World Environment Day (5<sup>th</sup> June) by the District Collector K. Mohammed Y. Safirulla.

The core team was selected soon afterwards and immediately got down to work. In the second week of June they intimated all second year class teachers to explain the thrust of the project and to get permission to meet with the second year students to ensure their participation in the project. By the third week of June the core team had gone to all the second year classes beginning from the II year Sociology class propagating the project, distributing the 'Ten Commandments' pamphlets, and dividing each class into groups of ten with leaders for each group. The phone numbers of the coordinators from each class were collected. WhatsApp groups were formed and students started shared photos of their various green habits.

### 1.6 A record of photographs shared

Commandment	Arts Block	Science Block	Total
1. Segregation	12	04	16
2. Biodegradable waste disposal	05	09	14
3. Non-biodegradable waste to recyclers	15	10	25
4. Organic cultivation of vegetables at home	230	205	435
5. Green Protocol for social functions at home	0	0	0
6. Say No to plastic bags	08	07	15
7. Not buying food parcels in reusable packaging	0	0	0
8. Buy five grocery items without packaging	0	0	0
9. Keep track and reduce electricity and water bills	0	0	0

10. Spread awareness	03	20	23
<b>GRAND TOTAL</b>	<b>273</b>	<b>255</b>	<b>528</b>

### **1.7 Meetings, Workshops, Seminars, Other Activities**

The core members periodically held meetings to review the progress, discuss activities, share the challenges and to plan ahead. The first of such meetings was held on 09-06-2017 as soon as the core team was formed. Meetings of the main coordinators of each class were also held from time to time. On 27-06-2017 one such meeting was held in the 1st DC Sociology class. Almost all the coordinators were present. The core committee discussed the *EnteHarithaBhavanam* project and its upcoming programs and also briefed the coordinators regarding the coordinators workshop that was being organized on Saturday, the first of July by the District Suchitwa Mission at the District Panchayat Hall. The core committee also asked the main coordinators to start sending the photos. The core committee also decided to meet and conduct a meeting the next Friday.

A workshop for the coordinators of *EnteHarithaBhavanam* was organized by District Suchitwa Mission at the District Panchayat Community Hall near the KakkanadCollectorate on 22 July 2017. Almost all the coordinators including the main coordinators and the core team members were present for the meeting. The core team members had prepared a PowerPoint presentation regarding the working of the project including some of the photos that the students had shared on WhatsApp. Some concerns regarding waste created by milk packets and electronic waste were also put forward by the core team at the workshop. Some coordinators shared their experiences of initiating green activities at their homes. Aaysha M. Ashraf of II DC Physics shared how she had enforced the Green Protocol at an *ifthar* function at her home.



*Figure 2: Aaysha M. Ashraf of II DC Physics sharing her experiences*

After the PowerPoint presentation a class was taken by C.N. Manoj, Chairman and Trustee of Pelican Foundation on what students can do for the environment. Following this, Dr. Nirmala Padmanabhan and Caroline of the Suchitwa Mission introduced the interview schedule for the baseline survey to be conducted among the students. The interview schedules were handed over to Dr. Nirmala Padmanabhan to be later distributed among the students.



*Figure 3: Class for coordinators by Dr. C.N. Manoj*

Core team members Sheethal V.S and Elizabeth Varghese Anthikkat were among the students who accompanied Dr. Nirmala Padmanabhan to attend a workshop at Trivandrum in relation with the World Ozone Day.

### **Meeting with the District Collector**

The core team members met the Ernakulam District Collector K. Mohammed Y. Safirulla on 18<sup>th</sup> December 2017 and presented the report on his brainchild, the EnteHarithaBhavanam project to apprise him of its progress. The achievements and the drawbacks of the project were discussed. The Collector appreciated the major success of the organic cultivation by the students. He also said that these green activities should continue with a follow-up in the

forthcoming academic years. The core team members also expressed the challenges they faced including:

- Lack of interest and motivation in some volunteers
- Inability to follow some green habits
- Monthly tabulation of the green habits of each student
- Data recording
- Compilation of photos from WhatsApp

The core team has also given some suggestions for government intervention. They are:

- Alternatives to milk packets – Milk booths
- Asking retail majors – Reliance, More, Lulu to give incentives to people who bring their own carry bags
- Government asking the retailers to give incentive to the customers who will bring their own steel glass, carry bags,
- Encouraging paper bags and cloth bags. Through that we can also give an encouragement for the Kudumbasree, Bhoomithram Club and other Self-Help Groups.
- Promoting alternatives to plastic pads – cloth pads and encouraging women to use cloth pads during menstruation.
- Approaching media to promote the use of cloth bags, cloth pads and steel glasses where possible
- Setting waste disposal baskets in each area – setting up two separate waste baskets to separate degradable and non degradable waste.

The collector K. Mohammed Y. Safirulla encouraged the students by saying that “The challenges are the result of the primary step for your success. The issues regarding environmental concerns take a huge time to get success. You are the beginners of the change – through you let the world change”.



*Figure 4: Meeting with the District Collector*

## **PROGRESS ON THE 10 COMMANDMENTS**

### **1. Segregation of solid waste generated at home**

According to the September monthly report prepared by the students of the Department of Physics, some students started separating solid wastes generated into degradable and non-biodegradable products and two separate bins were kept to remove the same. The waste collector would take away the non-biodegradable waste and the waste in its separated form made his job much easier. The Survey of Green Habits conducted among students reveals that over one-third of the students practice segregation of waste at home:

Does your family segregate bio-degradable and non-degradable waste at home?		
Values	Frequency	%
Yes	530	66.8
No	177	22.3
No answer	81	10.2
Invalid answer	5	0.6
<b>TOTAL</b>	<b>793</b>	<b>100</b>

## Does your family segregate bio-degradable and non-degradable waste at home?

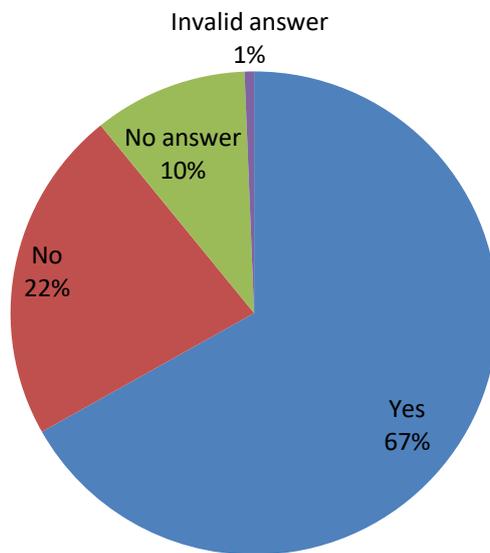


Figure 5: Segregation of non-biodegradable waste



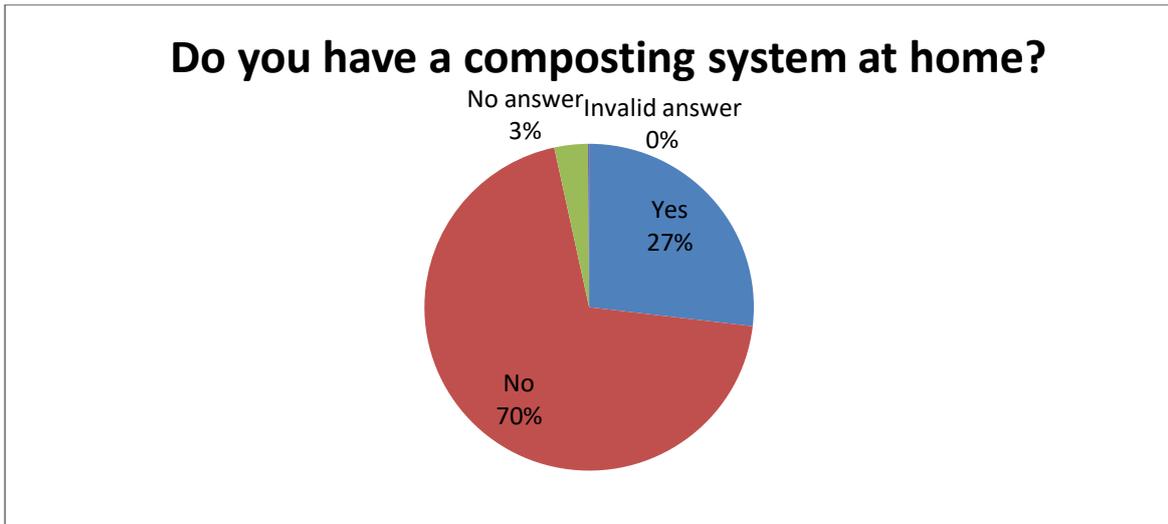
*Figure 6: Segregation of Waste posted by Tara Mohandas of II DC Economics*



## **2. Feeding biodegradable waste to animals or converting it to compost**

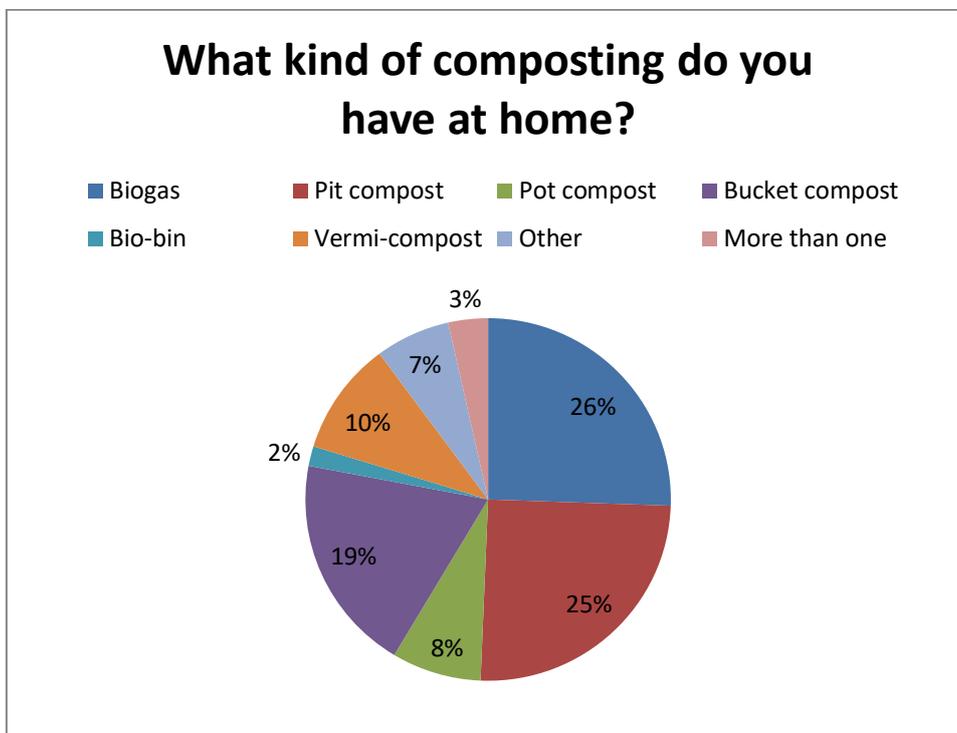
The students of II DC Botany in their monthly report for July said that students had started to convert the biodegradable waste at home using composting techniques. According to the September report of the Department of Physics, this was possible for the students staying in independent houses, who managed to dispose the bio-waste like food by making compost in the backyard and also by feeding cats. According to the Survey of Green Habits:

Do you have a composting system at your residence?		
Values	Frequency	%
Yes	213	26.9
No	553	69.7
No answer	26	3.3
Invalid answer	1	0.1
<b>TOTAL</b>	<b>793</b>	<b>100</b>



Just above one-fourth of the students had a composting system at home. This commandment would not be easy for students staying in flats to follow. Among the students who had composting systems, there were the different forms of composting being used. Bio-gas, pit compost and bucket compost seem to be the most frequently used composting systems at students' residences. (There seems to be a discrepancy in the total number of students who used composting as compared to the previous table as some of the students may have left that particular column blank)

What kind of composting do you have at home?		
Values	Frequency	%
Biogas	58	25.6
Pit compost	57	25.1
Pot compost	18	7.9
Bucket compost	44	19.4
Bio-bin	4	1.8
Vermi-compost	23	10.1
Other	15	6.6
More than one	8	3.5
<b>TOTAL</b>	<b>227</b>	<b>100</b>





*Figure 7: Biogas Plant at home, posted by Anna of II DC Communicative English*



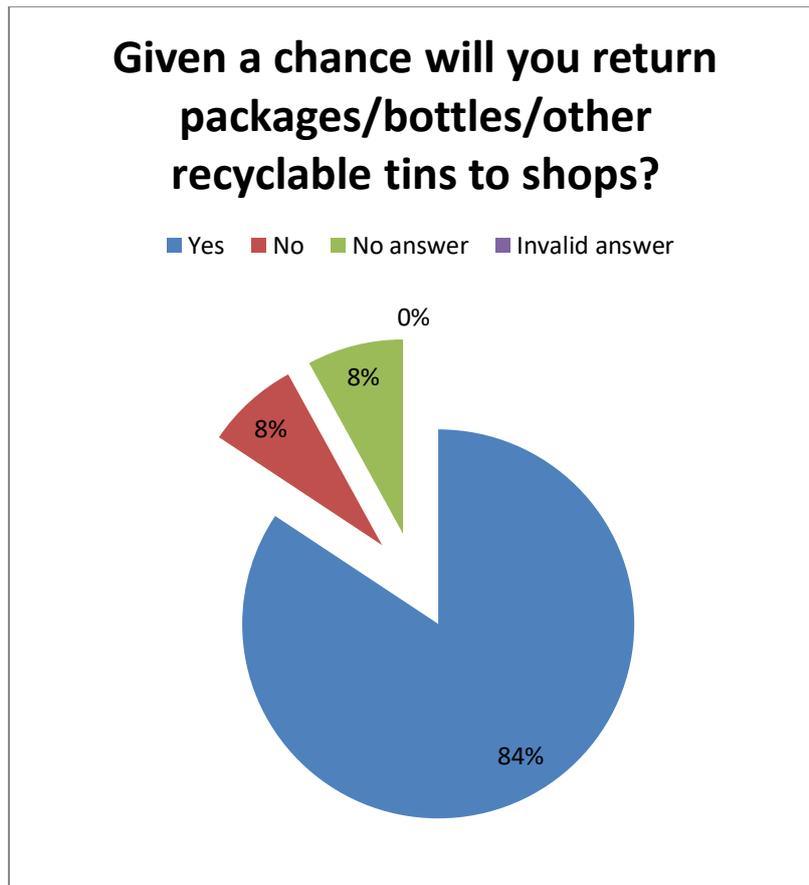
*Figure 8: Biogas plant, posted by Hibha of II DC B.Com Self-Financing*

### **3. Safely handing over non-biodegradable waste to recyclers**

Some students expressed the difficulty that they were not able to hand over plastic waste or e-waste to recyclers (Botany monthly report – July). This may have been because there was no regular mechanism for this in their localities. In this case the concerned local bodies would have to take the initiative to ensure that adequate mechanisms are in place for the collection of different forms of waste from residential areas. Without governmental support in this regard all families may not be able to keep their homes green.

According to the Green Habits survey, a great majority of students were willing to return packages/bottles/other recyclable tins to shops:

Given a chance will you return packages/bottles/other recyclable tins to shops?		
Values	Frequency	%
Yes	669	84.4
No	61	7.7
No answer	63	7.9
<b>TOTAL</b>	<b>793</b>	<b>100</b>



At the same time, just a quarter of students reported having a waste-recycling or collection centre near their home. Over one-third of the students did not have such a centre near their home or are not aware of the matter. Therefore one may assume that if there is a greater number of waste-collection and recycling centres and personnel, more people may contribute to recycling materials.

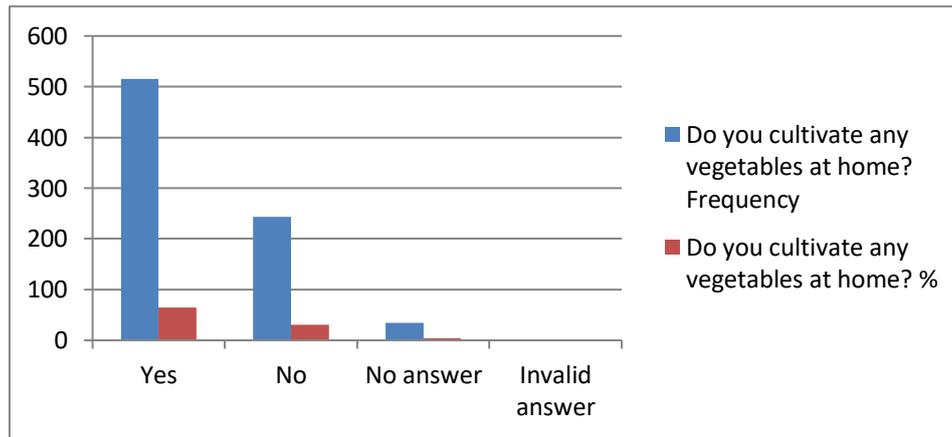
Do you have a waste-recycling centre/waste collection centre near your home?		
Values	Frequency	%
Yes	201	25.3
No	272	34.3
Don't know	260	32.8
No answer	59	7.4
Invalid answer	1	0.1
<b>TOTAL</b>	<b>793</b>	<b>100</b>



#### 4. Organic cultivation of vegetables at home

This seems to have been one of the most successful commandments that was followed by students. In the Department of Physics alone, in their first three months around 100 photos were collected regarding organic vegetable cultivation as a majority of students have a mini vegetable garden at home (September report). Many students had posted photos of organic vegetable cultivation at home. In the Survey of Green Habits conducted among the students, almost 65% reported growing vegetables at home:

Do you cultivate any vegetables at home?		
Values	Frequency	%
Yes	515	64.9
No	243	30.6
No answer	34	4.3
Invalid answer	1	0.1
<b>TOTAL</b>	<b>793</b>	<b>100</b>

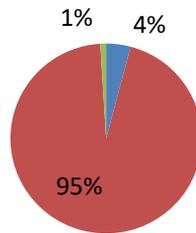


This may be due to the great popularity that organic cultivation of vegetables has got in recent times in Kerala with growing awareness of the pesticide content in the vegetables bought from the market. The success of the Manju Warriar movie ‘How Old Are You’ and her promotion as the brand ambassador of organic farming in Kerala may also be an inspiration to the young women of St. Teresa’s College in this regard. This is borne out by the fact that 95% of those who are cultivating vegetables at home report that they do not use chemical fertilizers.

Do you use chemical fertilizers for cultivating vegetables at home?		
Values	Frequency	%
Yes	21	4.1
No	481	94.9
Invalid answer	5	1
<b>TOTAL</b>	<b>507</b>	<b>100</b>

## Do you use chemical fertilizers for cultivating vegetables at home?

■ Yes ■ No ■ Invalid answer



*Figure 9: Ginger plant, Lakshmi Priya II DC B.Com*



*Figure 10: Posted by Remya of II DC History*



*Figure 11: Chilli plants by Jesna, II DC French*



*Figure 12: Tomato Plant, Tara of II DC Economics*



*Figure 13: Tapioca harvest, Sandra of II DC History*



*Figure 14: Tomato, Abhirami of II DC English*



*Figure 15: Ladies Finger, Jismi of II DC Computer Applications*



*Figure 16: Cultivation of cheeraat home*



*Figure 17: Passion Fruit, Lavitha of II DC Sociology*



*Figure 18: Plantain, posted by Devi of II DC B.Com*

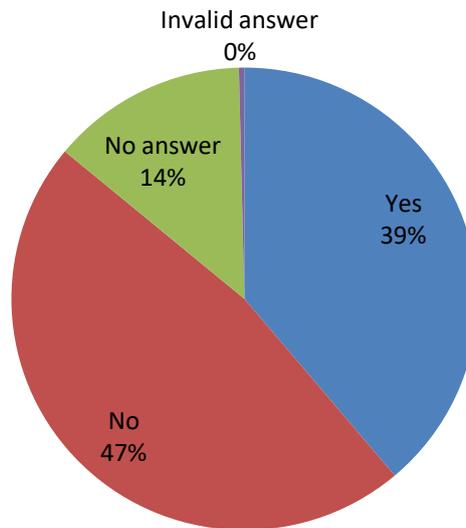
## **5. Observing Green Protocol for functions at home**

Students are becoming more aware of the concept of ‘Green Protocol’. Aaysha M. Ashraf of II DC Physics was given special recognition for convincing her family to adopt the Green Protocol for an *ifthar* function held at her house. According to her, observing the Green protocol during different functions including ifthar parties gave visitors a different experience (September report).

The Green Protocol was launched at college last year by the Chief Economic Advisor Arvind Subramaniam. Yet almost half of the student respondents in the Survey of Green Habits said that they had not heard of the Green Protocol. Awareness classes regarding the Green Protocol were taken soon after by the volunteers of *Ente Haritha Bhavanam* who also distributed pamphlets in the classes they visited.

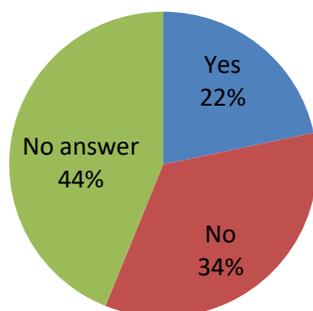
Have you heard about the Green Protocol for social functions?		
Values	Frequency	%
Yes	308	38.8
No	374	47.2
No answer	108	13.6
Invalid answer	3	0.4
<b>TOTAL</b>	<b>793</b>	<b>100</b>

## Have you heard about the Green Protocol for social functions?



Have you practised the Green Protocol for social functions?		
Values	Frequency	%
Yes	172	21.7
No	273	34.4
No answer	348	43.9
<b>TOTAL</b>	<b>793</b>	<b>100</b>

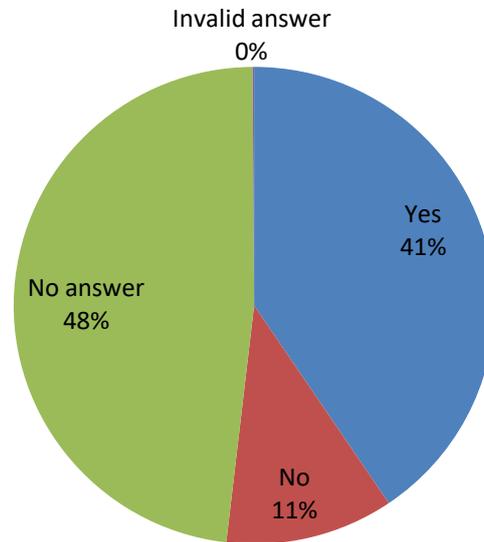
## Have you practised the Green Protocol for social functions?



Are you willing to take initiative for implementing  
the green protocol in any social function in your  
home or locality in next 3 months?

Values	Frequency	%
Yes	321	40.5
No	90	11.3
No answer	381	48
Invalid answer	1	0.1
<b>TOTAL</b>	<b>793</b>	<b>100</b>

**Are you willing to take initiative for implementing the green protocol in any social function in your home or locality in next 3 months?**



**6. Say No to plastic bags**

Some students were successful in convincing parents to adopt simple habits like avoiding plastic bags (Botany July report; Physics September report). Many students are seen to bring cloth bags to college. This is also helped by the fact that most of the first year students had purchased Bhoomitra cloth bags at the time of their admission to college.



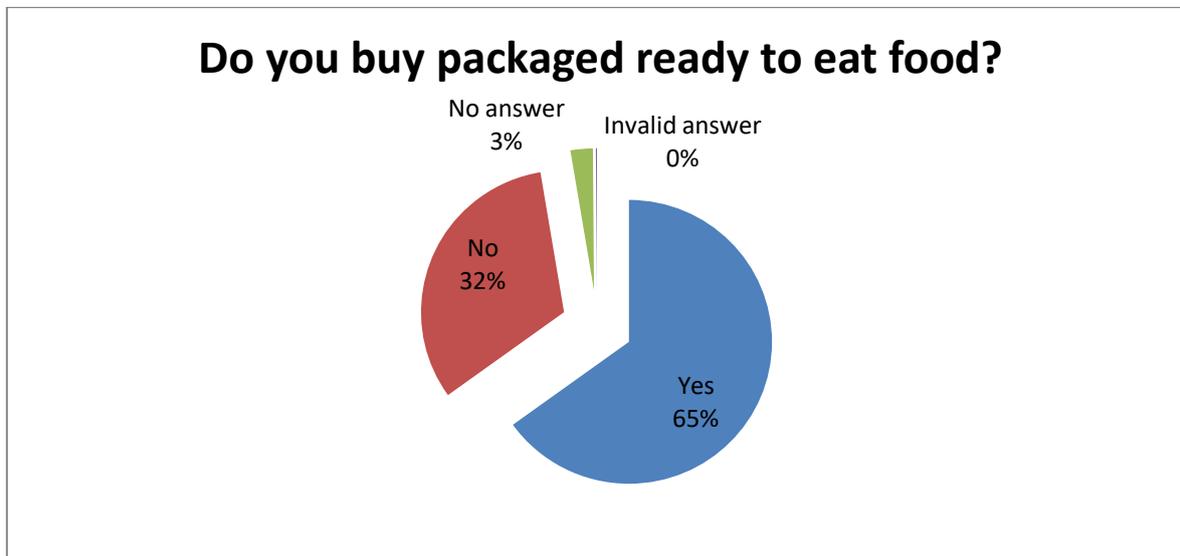
*Figure 19: Using BhoomitraSanchi and other non-plastic bags in campus posted by Elizabeth Varghese of II DC Home Science (core team member) and Anjali Suresh of II DC Communicative English*

### **7. Say No to buying food parcels in non-reusable packaging**

The use of plastic covers was reduced to a minimum and for purchasing fishes thermal packs (polar bags) were used as it can also be reused and helps decrease the use of plastic cover (Physics September report).

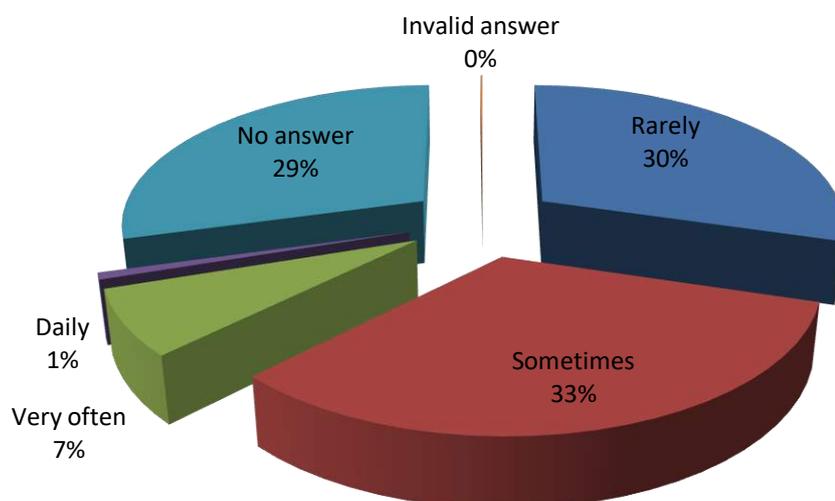
According to the Survey of Green Habits, almost one-third of the students used to buy packaged ready-to-eat food at home. This is a major area where behavioural change may be brought about.

Do you buy packaged ready to eat food?		
Values	Frequency	%
Yes	516	65.1
No	256	32.3
No answer	20	2.5
Invalid answer	1	0.1
<b>TOTAL</b>	<b>793</b>	<b>100</b>



How often in a month do you buy packaged ready-to-eat food?		
Values	Frequency	%
Rarely	235	29.6
Sometimes	261	32.9
Very often	58	7.3
Daily	6	0.8
No answer	232	29.3
Invalid answer	1	0.1
<b>TOTAL</b>	<b>793</b>	<b>100</b>

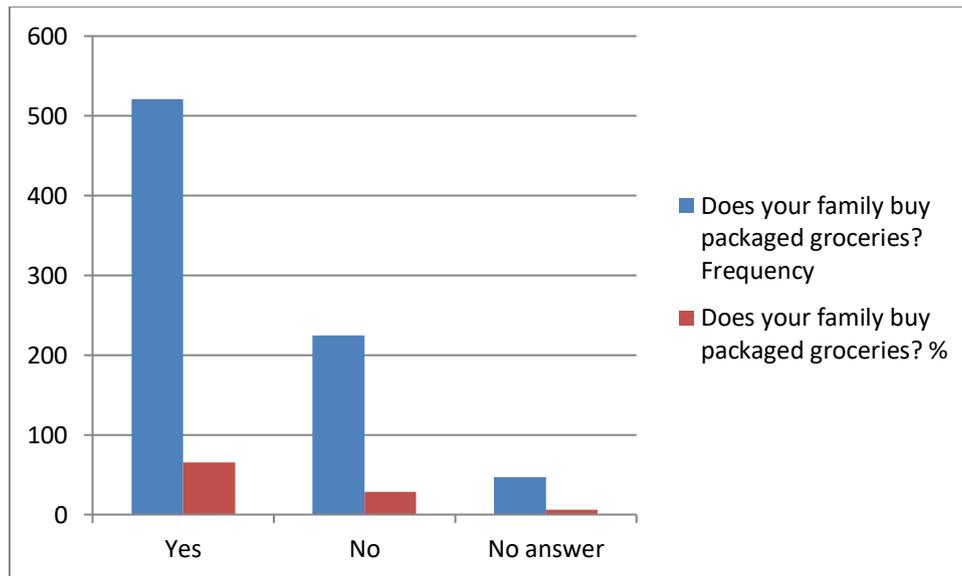
## How often in a month do you buy packaged ready-to-eat food?



### 8. Buying at least five grocery items without packaging

Some students were successful in convincing parents to adopt simple habits like buying groceries in cloth bags (Botany monthly report – July) Groceries were also purchased from local shops and thus it helped to pack many items in a single bag taken from home. (Physics September report). Yet almost one-third of the students reported buying packaged groceries therefore this is another area where awareness building of consumers along with pressure from administration can help in reducing the usage of plastic and packaging.

Does your family buy packaged groceries?		
Values	Frequency	%
Yes	521	65.7
No	225	28.4
No answer	47	5.9
<b>TOTAL</b>	<b>793</b>	<b>100</b>



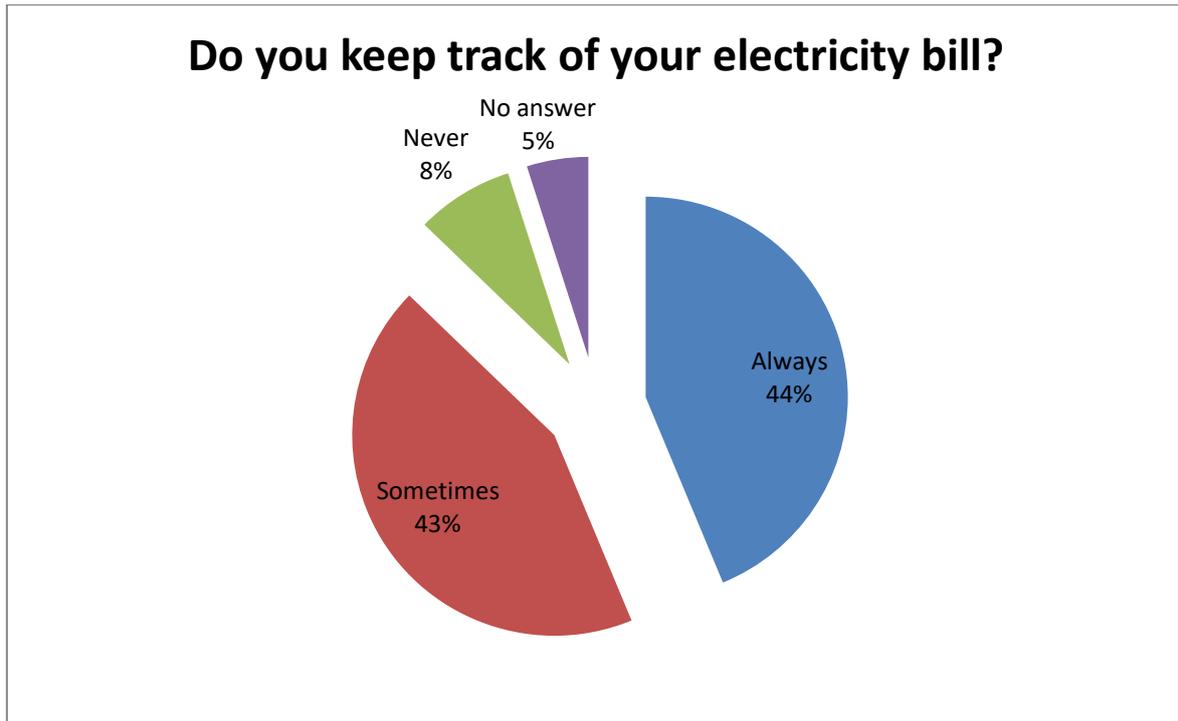
### 9. Keeping track of electricity and water bills at home and bringing about reduction in these

Though over 85% of students reported keeping in track of their electricity bills regularly and over 60% said they followed some methods to reduce the same, it was not possible to get specific proofs to keep track of this commandment during this edition of EnteHarithaBhavanam. In the future students may be able to share photos of their electricity bills of different months to show if they were successful in reducing their bills.

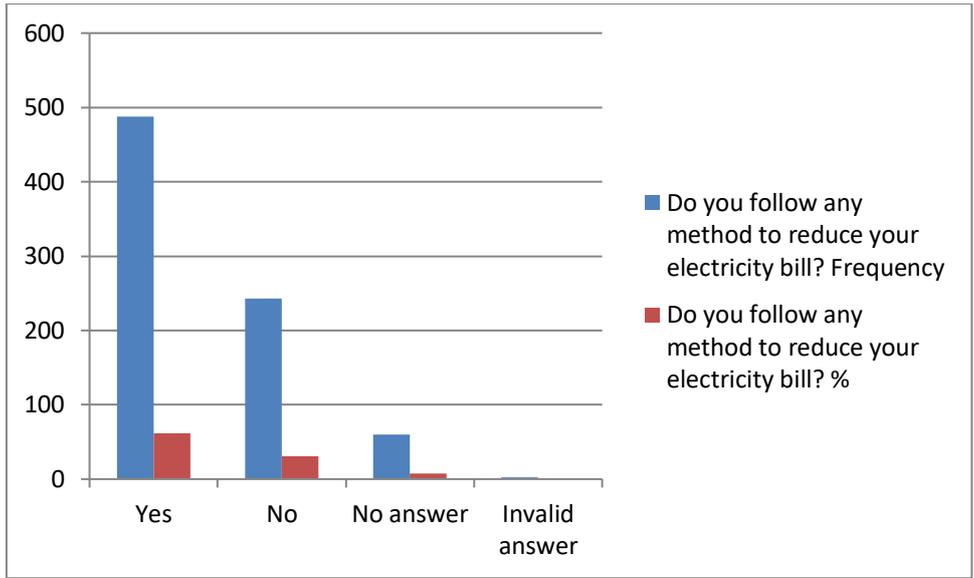
The case of water bills is slightly different as fewer families seem to keep track of their water bills or take measures to conserve water. We must consider whether this is due to the comparatively lesser cost of water or greater availability of non-commercial sources of water, and whether putting a greater price on water will lead to increased concern about water conservation within households.

The electricity and water bills were not efficiently reduced in the period that the students observed but a minor decrement in both is notable. If this pace is maintained, the bills will reduce drastically in 6 months and thus electricity and water can be saved (Physics September report).

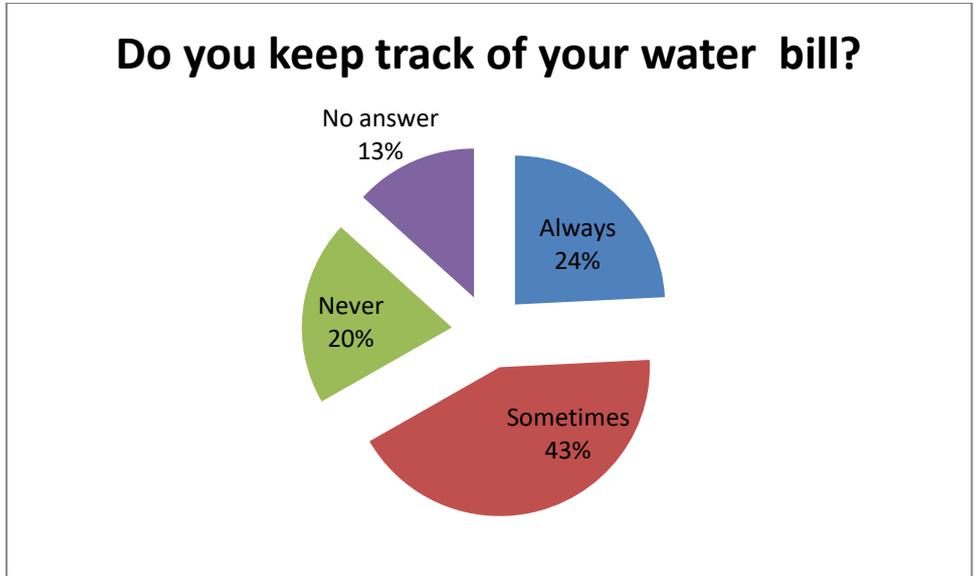
Do you keep track of your electricity bill?		
Values	Frequency	%
Always	347	43.8
Sometimes	345	43.5
Never	62	7.8
No answer	39	4.9
<b>TOTAL</b>	<b>793</b>	<b>100</b>



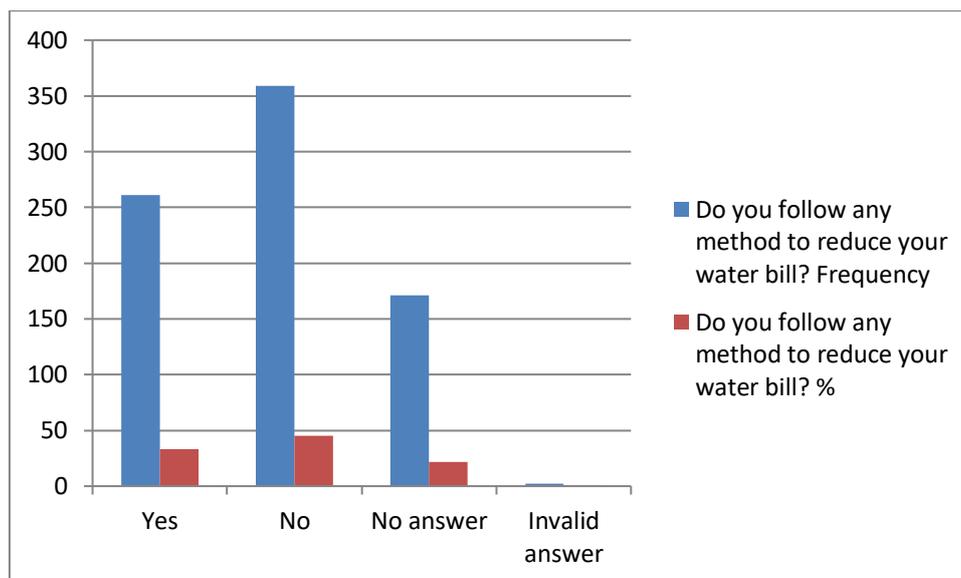
Do you follow any method to reduce your electricity bill?		
Values	Frequency	%
Yes	488	61.5
No	243	30.6
No answer	60	7.6
Invalid answer	2	0.3
<b>TOTAL</b>	<b>793</b>	<b>100</b>



Do you keep track of your water bill?		
Values	Frequency	%
Always	192	24.2
Sometimes	337	42.5
Never	159	20.1
No answer	105	13.2
<b>TOTAL</b>	<b>793</b>	<b>100</b>



Do you follow any method to reduce your water bill?		
Values	Frequency	%
Yes	261	32.9
No	359	45.3
No answer	171	21.6
Invalid answer	2	0.3
<b>TOTAL</b>	<b>793</b>	<b>100</b>



### 10. Spreading awareness about all of the above message to at least five others

Some students spoke about verbally spreading awareness regarding the Ten Commandments among their family and acquaintances (Physics September report; Botany July report) while others pasted the Ten Commandments in the notice boards of their residential areas. Yet a limitation was observed that these measures did not convey the issue in adequate depth, and more innovative ways of spreading awareness needed to be discovered. Some students also arranged classes in their residential areas in order to spread awareness regarding environmental protection (Botany monthly report – July).

The core team, coordinators and volunteers of EnteHarithaBhavanam also took permission from the college authorities and used the weekly 'Value Education' hour on Thursdays to go to all the classes (not just the second year classes which were part of the project) to spread awareness about the Ten Commandments and the Green Protocol. One such session was conducted all over Arts Block on 23-11-2017 by volunteers of EnteHarithaBhavanam.



*Figure 20: Ten Commandments on Residents Association notice board, posted by Mary Jos Pallan of II DC Communicative English*



*Figure 21: Awareness class on the Ten Commandments and Green Protocol at Arts Block on 23-11-2017*





*Figure 22: Awareness Class on Ten Commandments and Green Protocol at Science Block*

## **1.8 GREEN HABITS SURVEY**

Interview schedules for the Survey of Green Habits (given in the annexure) were distributed to all the coordinators who were asked to interview the ten students in their group and return the filled schedules to the core team. Out of 927 schedules distributed, 793 schedules were returned satisfactorily. Once the collection of schedules was completed, a data entry team of six students under the leadership of Anju Raju, coordinator from the Department of Sociology, set about entering the data from the interview schedules collected. They completed the data entry putting in over 300 hours of work.



Figure 23: Data entry team at work

### Data Regarding Methods of Waste Disposal followed

Sl. No	Item	Burning	Bury in soil	Dumpin own compound	Throw outside the compound	Give to waste collector	Sell to Recycler	Composting	Reusing	Mixed methods	Others	No Answer
1.	Food waste	25	155	109	12	260	4	121	3	64	23	17
2.	Garden waste, leaves, twigs	214	192	125	9	87	4	78	4	28	8	44
3.	Coconut shells, other organic waste	292	73	97	5	162	20	27	19	22	24	52
4.	Milk packets	122	16	31	11	432	96	6	5	11	16	47
5.	Plastic covers	93	13	33	10	450	115	6	24	23	3	23
6.	Plastic Bottles	31	13	27	14	417	205	6	31	19	4	26
7.	Other Plastic waste	50	8	25	14	441	192	9	3	11	2	38
8.	Glass	10	41	101	26	364	181	7	8	7	4	44
9.	Metals	3	23	62	25	282	328	7	9	8	2	44

10.	Electronic waste items	2	12	21	18	277	373	9	4	8	15	54
11.	Old clothes	126	4	7	7	205	136	9	68	23	148	60
12.	News paper/ cardboard	48	1	9	7	237	403	17	11	27	12	21
13.	Medical waste	97	43	65	15	348	77	12	1	8	15	112
14.	Sanitary napkins/ diapers	482	12	15	3	213	11	6	0	8	2	41

### **GREEN AUDITS OF BEST PERFORMING STUDENTS' HOMES**

The green habits of the students were evaluated by the core team members by conducting visits to the homes of students who performed well. Some of the homes visited were that of Petricia Sara (2<sup>nd</sup> DC Physics), Aaysha M. Ashraf (2<sup>nd</sup> DC Physics) and Teresa Joshy (2<sup>nd</sup> DC History) on 9/2/18, 16/02/18 and 17/02/18 respectively.

It was truly inspiring for the core team to see them follow the commandments put before to them with much interest. Various kinds of vegetables and fruits are grown in their kitchen gardens: drumsticks, spinach, papaya, brinjal, jackfruit, banana, coconut, passion fruit, chickoo, curry leaves to name a few. Various medicinal plants like Aloe vera, *panikkoorka* and the like are also being cultivated.

It is worth mentioning that Teresa Joshy has a cattle farm at her place. Aaysha and her family make it a point to practice the Green Protocol during festivals and other celebrations such as *ifthar* held at her home.

Methods of proper waste disposal including segregation and composting of waste were being carried out in all the houses visited. The fact that they are setting a good example for their neighbours and friends also fulfils the objective of our 10<sup>th</sup> commandment – to spread awareness about these initiatives among others around them.



Figure 24: Audit of Petricia (II DC Physics)'s Green Home by core member Elizabeth on 09-02-2018

ANNEXURES



*Figure 25: Audit of Aaysha (II DC Physics)'s Green Home by core member Elizabeth on 16-02-2018*



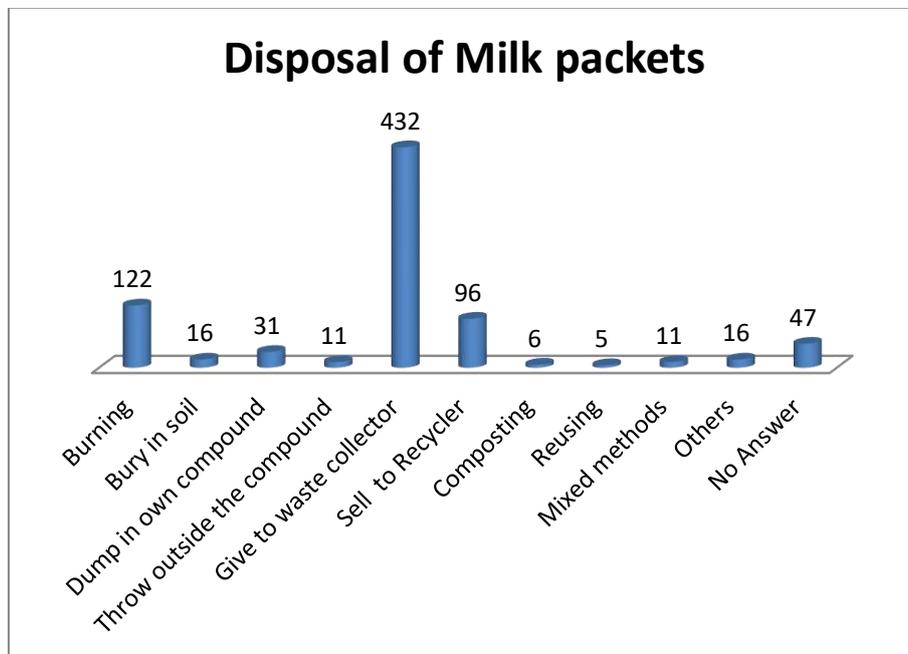
*Figure 26: Audit of Teresa Joshy (II DC History)'s Green Home on 17-02-2018 by core members Sheethal and Elizabeth*

## **SOME DIFFICULTIES AND SUGGESTIONS TO THE AUTHORITIES**

Based on the experience of monitoring the ‘EnteHarithaBhavanam’ project and the following of ten simple commandments at home, a few suggestions came up from the side of the students. These are as follows:

- Disposal of milk packets was a major difficulty that many students pointed out in their attempt to make their homes eco-friendly. There has arisen a suggestion that the administration may promote ‘**milk booths or milk ATMs**’ to collect and dispense

milk in residential localities. Such milk booths are seen in places like Delhi and local residents can bring containers from their homes and collect milk by buying a token at the counter instead of having to buying milk in plastic packets.



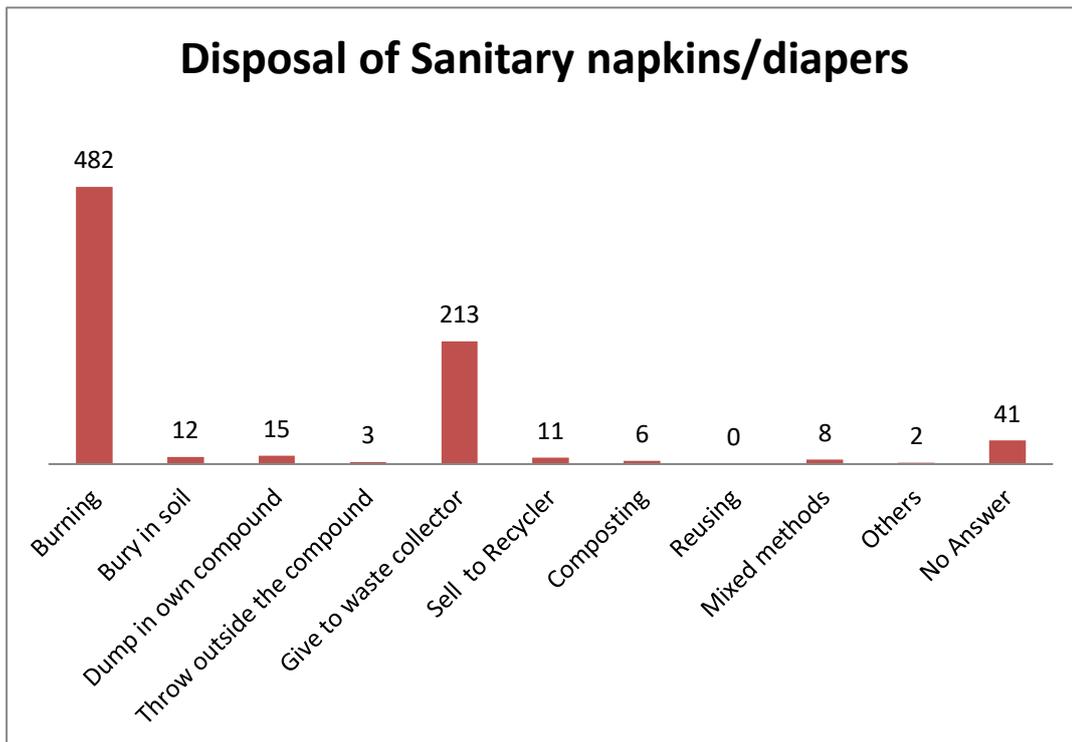
- One of the findings of the Green Habits Survey was that on an average a family used at least 20 sanitary napkins in a month. The safe disposal of sanitary napkins is also a major problem for many households – burning was the most frequent way in which sanitary pads were disposed. Therefore it is suggested that awareness may be generated regarding the **use of alternatives such as eco friendly biodegradable sanitary napkins cloth pads, menstrual cups, etc.** to reduce the usage of plastic as well as to address the issue of disposal of plastic sanitary pads. Our research on alternative revealed that such Bio degradable sanitary napkins which are certified by CIPET- A central Govt institute - are being popularized in other states. Hence efforts may be made to make these available in all parts of Kerala and promote its usage among public. On enquiring we came to understand that these units are willing to share their technology and facilitate local production Hence we urgently need to consider feasibility of setting up a production unit in Trichur jail or Ernakulam jail so that the product can be made available at competitive price to citizens. This needs to be complemented with a massive awareness campaign to motivate citizens into

adopting

sustainable

menstruation

practices.



- Banning of plastic carry bags per se is not considered viable or effective in a developing country like India which is characterized by weak enforcement, intervention by political parties, influence groups etc. This needs to be supported with pricing of bags (revenue instruments) as well as non-revenue strategies of making available alternatives and massive social media campaigns to promote good bag habits among citizens. As of now most TV, or radio campaigns emphasize decentralized management of organic waste at source and segregation, recycling. Very little attention is paid to reduction or prevention of waste through promotion of green protocols. The few initiatives that do emphasize green protocols focus on single-use plastic cups and plates rather than carry bags. Hence greater emphasis and focus needs to be assigned to reduction of single-use plastic carry bags which are found dotting the entire landscape of Kerala. Development of a social norm against single-use plastic carry bags is the need of the hour in Kerala. Such a strategy may be worked out based on the Nobel Prize-winning concepts of nudges and behavioral economics.
- The administration may also **facilitate institutional support to consumers using cloth bags**, especially at retail shops/ supermarket stores by

1. Encouraging the shops and their personnel to favour those customers who come with own bags specially to purchase vegetables, loose provisions. Currently the billing system is that each vegetable/ provision purchased has to put in a plastic/ paper bag provided by the firm which is then weighed and the price tag stuck on it. Consumers who carry their own bags are then at a disadvantage and looked upon in disfavor since the employees are not sensitized to such green practices. Standard weighing tubs, baskets may be provided in such stores and a favourable system put in place after discussions with stakeholders.

2. Motivating shops to Give a discount on every nth bill for those who bring their own cloth bags. The starting point for such a promotion campaign can be large supermarkets who have computerized billing. These computers can be easily programmed to identify all bills which do not have pricing for such bags and every nth such bill ... either 500 th or 1000 th such bill can be given 2-5% discount on the total bill amount. Success of such a scheme needs the integrated effort of various stakeholders such as supermarkets, residents associations, media etc. A meeting can be called by the District administration under the leadership of District collector and Suchithwa mission which can be co-ordinated by a student team representing various educational institutions or an NGO.

- Though quite a few families were found to segregate the waste generated at home, it was also found that many families did not engage in this practice and also that the presence of organized waste collection facilities often helped families to maintain this good practice. Where families had to take care of their own waste, segregation was less common. Therefore the administration may take care to extend **waste collection** facilities, including that of **e-waste and garden waste**, to all households in the districts and not just within corporation limits.
- Use of disposable containers was common among students and their families who bought food from outside. Hence a Dubba Challenge with discount incentives as well as media campaign to change the social norm in this regard may be visualized.

## **LIMITATIONS**

- It was difficult to sustain the initial enthusiasm on the WhatsApp groups, especially when practical tests, exams, youth festivals and semester breaks intervened.

- A further loss of momentum was noticed when the survey was initiated. The survey took up much time and energy of coordinators and students and in a sense distracted from the main project. Students suggest that the survey process could be streamlined to make it more effective.
- EnteHarithaBhavanam – a Green Home – cannot be made a reality by a student alone. Many students found the reluctance of family members to adopt green habits to be a difficulty though some were also successful in convincing parents to adopt simple habits like avoiding plastic bags and buying groceries in cloth bags (Botany monthly report – July)
- Monitoring and Evaluation of the progress of the project was another difficulty. Monthly tabulation of activities by student coordinators proved difficult to manage and coordinate as students were not as interested in doing paper work as they were in sharing photos.
- Keeping track of photos on WhatsApp was not as easy as it seemed as most students did not mention their name *within the photo* before they shared it on WhatsApp. Such photos made it difficult to track the well-performing students later on.
- Also most photos did not have captions pasted on the photo itself. Therefore when it was shared many times it was difficult to understand the contents of the photo.

## 1.9 Looking Ahead

The ‘EnteHarithaBhavanam’ project has provided a unique platform for the second year students of St. Teresa’s College to go green, protect the environment and express their love for nature starting from their very homes by practicing ten simple commandments. This project, with suitable modifications can be extended to educational institutions across the state to bring about an ecological revolution beginning from the leaders of the future. It highlights ample opportunities for social intervention and action projects for initiating social change which an essential pre-requisite for sustainable development in Kerala.

## 1.10 Recommendations

- All educational institutions NSS volunteers and school nature clubs etc. should be re-oriented to work for promoting green habits within campus -students and teachers

should be encouraged to promote organic vegetable cultivation and the use of eco-friendly cloth bags.

- Alternatives to milk packets – Milk booths.
- Policy prescriptions at the state level are needed. - Major retail supermarkets to give incentives to customers who bring their own carry bags, steel glass etc.
- Encourage the use of cloth and paper bags or Bhoomithram bags in Kudumbasree, Self-help groups and the like from where its use can be further promoted.
- Promoting and availability of economical alternatives to non biodegradable pads – Cloth pads.
- Approach media to promote the use of eco-friendly items

#### ANNEXURES